EFFECTIVENESS OF AMLA JUICE ON HEMOGLOBIN LEVEL AMONG YOUNG ADULT FEMALE WITH ANEMIA AT SREE MOOKAMBIKA COLLEGE OF NURSING KULASEKHARAM

A DISSERTATION SUBMITTED TO THE TAMILNADU DR.M.G.R. MEDICAL UNIVERSITY CHENNAI, IN PARTIAL FULFILMENT FOR THE DEGREE OF MASTER OF SCIENCE IN NURSING

OCTOBER 2015

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BONAFIDE CERTIFICATE

This is to certify that the dissertation entitled **"Effectiveness of amla juice on hemoglobin level among young adult female with anemia at Sree Mookambika College of Nursing, Kulasekharam in Kanyakumari District"** is a bonafide research work done by **Mrs.L.Aslin Johnsi, II year MSc (N),** Sree Mookambika College of Nursing, Kulasekharam under the guidance of **Associate Professor Mrs. Adlin Shynija, MSc. (N), Ph.D,(N)** Medical Surgical Nursing in partial fulfillment of the requirements for the Degree of Master of Science in Nursing under Tamilnadu Dr.M.G.R. Medical University.

Principal

Place : Kulasekharam
Date : 10.08.2015

Sree Mookambika College of Nursing,
Kulasekharam.

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Place : Kulasekharam
Date : 10.08.2015

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Kulasekharam.

DECLARATION

I hereby declare that the present dissertation titled **"Effectiveness of amla juice on hemoglobin level among young adult female with anemia at Sree Mookambika College of Nursing, Kulasekharam in Kanyakumari District"** the outcome of the original research undertaken and carried out by me under the guidance of **Prof. Mrs. Adlin Shynija, MSc. (N), Ph.D**,(N) Medical Surgical Nursing, Sree Mookambika College of Nursing, Kulasekharam. I also declare that the material of this has not formed in anyway the basis for the award of any degree or diploma in this university or any universities.

Place : Kulasekharam

Date : 10.08.2015

Mrs. Aslin Johnsi

II year MSc (N)

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INVESTIGATOR

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Abstract

Anemia is a global public health problem affecting both developing and developed countries with major consequences for human health as well as social and economic development. India is facing a grave public health problem, with the prevalence of anemia in India being greater than 40%. Amla juice is the best treatment to reduce anemia among young adult and to determine the effectiveness of amla juice on hemoglobin for the treatment of anemia among young adult. This study under taken to assess the effectiveness of Amla juice on hemoglobin level among young adult female with anemia at Sree Mookambika College of nursing, Kulasekharam. The objective of this study is to determine the effectiveness of amla juice on hemoglobin level among young adult females. The research design selected for the study was one group pretest-posttest design. A purposive sampling technique was followed to obtain a sample of 60 young adult who selected by inclusion criteria were included for the study. A digital hemoglobinometer and demographic data tool was used for the study. During the data collection pre test hemoglobin level was estimated on the first day followed by amla juice for one month. Finally post test was estimated using the same hemoglobinometer. The data were analyzed using descriptive and inferential statistics. The study identified that the level of hemoglobin was increased after giving the amla juice. It was found that there was a significant improvement in the level of hemoglobin after giving the amla juice. The effectiveness of amla juice was found to be $t=19.33*$, df =59, $P<0.05$. The conclusion of the study shows that amla juice found to be an effective alternative therapy in increasing hemoglobin level for anemic young adults.

Key Words: Amla juice, Young adults, Anemia.

CHAPTER I

Introduction

"The young adult still remain a young planet that neither get, light or water, she remains the flower that could have blossomed But didn't".

(Sonia Arora)

Anemia is a global public health problem affecting both developing and developed countries with major consequences for human health as well as social and economic development. India is facing a grave public health problem, with the prevalence of anemia in India being greater than 40%. Anemia is an indicator of poor nutrition and poor health with major consequences for the human health as well as for the social and economic development of a population.

(Rakeshchib, 2014)

Almost 25% of total population of world is affected with anemia. However the prevalence varies from 9% in developed countries and 43% in developing countries. 30% of non-pregnant women aged 20-40years are affected with anemia.

(The WHO Global data based on Anemia for 1993-2000)

According to Sanjay Kumar Gupta et.al (2015) The trend of anemia from 2008 to 2011 was in increasing trend, 9%, 15%, 22% and 27% respectively and in 2012 constant around 26%. Anemia was more common in females than males that are 18% in males and 82% in females. Anemia was highest among 19-25 years of age 42% followed by 26-40 years 23% and lowest among 0-10 years of age 8.69%. Anemia

among elderly was quite higher 15.5%. Most of the males had mild anemia 16% followed by moderate 6.61% and severe 0.77% in contrast most of the females had moderate anemia 42% followed by mild 31.35% and severe 3%.

World Health Organization (2010) grading system classified anemia is mild, moderate and severe. As per this report hemoglobin cut off values of anemia are the following grading. From9.5to 10.9 mg/dl comes under mild category and from 8 to 9.4 mg/dl will comes under the category of moderate and from 6.5 to 7.9 mg/dl will be in severe range and less than 6.5 is life threatening.

Young adult period is very crucial since these are formative years in life of an individual when major physical, psychological and behavior changes take place along with the development future of the society depends on these young people as they form a great human resource for the society. Nutrition and health need of the young people are also more because of more requirement for growth spurt and increase in physical activity.

Anemia makes several physical, physiological, and behavioral changes in all the people especially in young adult. The physical changes such as tiredness, pallor in, nail beds, palm and conjunctiva. Physiological changes such as tachycardia, feeling of palpitation, bounding pulse, low blood pressure and low immunity. And behavioral changes such as tiredness, lethargic, lack of concentration and irritability.

Harshad Patel et al., (2013)

India has the largest population of young adult which includes early young girls in the world being home are 243 million individuals with the age group of 20-29 years which constitutes 20percent of the world's 1-2 billion young adults.

Globally 1.62 billion people are affected with anemia, among that 468.4 million non-pregnant women are affected with anemia.

Benoist et al., (2008)

Abundant medical plant are presented in the Indian traditional system of medicine, mostly used one amongst them is Indian gooseberry Amla which is known as Emblica Officinalis is an Indian herbal which is extensively used in ayurvedic system of medicine. Amla is the best gift from nature to mankind which contains abundant source of vitamin C. which helps in enhancing the absorption of iron. Iron help's to make hemoglobin the part of the red blood cells that carries oxygen.

Swetha Dasaroju, et al 2013

Vitamin C deficiency can leads to anemia, or low red blood cell count. Vitamin C along with food rich in iron helps to create more acidic in the stomach, this acidic helps for the iron absorption. Hence, iron helps for making hemoglobin and lead a healthy life that is free from anemia.

(American family physician 2007)

Amla helps to treat the various diseases such as respiratory disease, Heart disease, eye disorder, Diabetes mellitus, and prevent aging etc. Amla juice is one of the best solution for improving hemoglobin.

(K.P. Sampathkumar, 2013)

The components of 100 grams of amla are the following : Moisture-81.8%, Minerals-0.5%, Calcium-50%, Total Vitamin-600mg, vitamin C-27.7mg,Iron-1.2%,

Energy- 58 Kilocalories-96%, Carbohydrate-13.7gms, Nicene-0.2mg, Thiamine -0.03mg and fibers- 11%.

(USDA National Nutritional data base 2011)

Honey is wonderfully rich golden liquid in the miraculous products of honey bees and a naturally delicious alternative to white sugar. Honey provides good, and excellent nutrients. The nutrients factors of a teaspoon of honey are,17.2 gm of sugar, 0.1 gm. of protein,11 micro gram of vitamin C, 10.92 mg of potassium,0.09mg of iron and 0.42 mg of magnesium.

(By National Honey Board 2014)

It is well known that anemia is a major public health problem in young adult population. Bringing down this anemia is a major need for the present societal world to live happily. The only way to reduce the incidence of anemia is improving the iron and vitamin C consumption in many ways mainly in young adult population. Since amla has much Iron (1.2 Mg) and vitamin C (27.7 Mg) in 100 grams of amla, the researcher decided to provide an intervention of amla juice with honey in order to improve the hemoglobin level.

Background Of The Study

According to World health organization 2005Anemia afflicts estimated two million people worldwide; mostly due to iron deficiency anemia it is primarily affect women. About 27% of young adults are estimated to be anemic in developing countries, 6% in developed countries.

According to international center for research on women, the rate of anemia in India is 55%.

According to A. san and S.J.kanmani2006, anemia is the health challenge in developing countries. Physical work capacity is reduced due to anemia. The decrease in hemoglobin has the tendency to reduce the availability of oxygen to the tissues, hence it reduce the cardiac output.

According to National Institution of Population sciences (2007) the prevalence of anemia in India is Punjab-39%, Tamilnadu-55%, Arunachal Pradesh- 50.6%, kerala-32.8%, West Bengal-63.3%, Rajasthan- 53.1% and Jharkhand- 69.5%. In India Urban area 50% of women affected with anemia and rural area 60% of women affected with anemia.

National Family Health Survey-3(2005-2006) shows that 55% of women and 24% of men are affected with anemia.

Amla is the rich source of vitamin C .Vitamin C deficiency can leads to anemia, or low red blood cell count. Vitamin C along with food rich in iron helps to create more acidic in the stomach, this acidic helps for the iron absorption so iron helps for making hemoglobin, it leads to healthy life that is free from anemia.

(American family physician 2007)

Saratha A et. al, 2010, conducted a study to assess the prevalence of Anemia on young adult female students in a medical teaching institution in Pondicherry. Among 300 medical and nursing students, 228(76%) were anemic 170 (56.6%) had mild and 58 (19.33%) had moderate anemia. It occurs because of their poor dietary habits.

Babita (2014) conducted a study to estimate the prevalence of anemia among 320 unmarried female nursing college students at Sant Baba Bhag Singh institution of nursing. Among 320 female nursing students 94%, were having anemia. The result shows that 45.3%, were having mild anemia, 51.3%, were having moderate anemia, and 3.3% were having severe anemia. The prevalence anemia among B.Sc. Nursing students is 96.2% and GNM is 92.5%.

Need For Study

World health organization 2005estimates that due to anemia, 2, 73,000death occurs due top anemia. Out of which 45% is in South East Asia, 31% in Africa, 9% in eastern Mediterranean, 7% in Americans, 4% in western pacific and 3 % in Europe.

World health organization 2012 the prevalence of anemia is 14% in developed countries and 51% in developing countries. 65-75% of Indian people affected with anemia.

National family health survey in India,(2014) suggested that young adult urban, semi urban in India are found to be anemic and prevalence rate between 61.9 to 88.9% begin higher among rural young women of higher order as compare to urban poor girls irrespective of their age dietary habits. Globally, anaemia affects 1.62 billion people, which corresponds to 24.8% of the population. The highest prevalence is in women (47.4%), and the lowest prevalence is in men (12.7%). However, the population group with the greatest number of individuals affected is young women (41.8%). Nearly 50 per cent of women of reproductive age and 26 per cent of men in the age group of 15-59 years are anemic.

According to National consultation on control of nutritional anemia in India (2000), Nine out of ten anemia sufferers live in developing countries, about 2 billion people suffer from anemia and an even larger number of people present iron deficiency. An alarming 600 million people in South-East Asia are suffering from iron deficiency anemia, predominantly affecting women of reproductive age and young children. The condition has a prevalence rate of 74% among women in the region ranging from 13.4% in Thailand to 87% in India. About 74% of women in Bangladesh, 63% in Nepal, 58% in Sri Lanka and Myanmar, 55% in Tamil Nadu, and 51% in Indonesia suffer from anemia.

According to the National Family Health Survey (NFHS)-(III) 2006, more than half of women in India (55%) have anemia, including 39 % with mild anemia, 15 % with moderate anemia and 2% with severe anemia.

Data from National Nutrition Monitoring Bureau (NNMB) 2008, India has among the highest number of cases of anemia in the world, Prevalence of anemia in all the groups is higher in India as compared to other developing countries. In India, anemia affects an estimated 50% of the population. The problem becomes more severe as more women are affected with anemia as compared to men. It is estimated that about 20%-40% of maternal deaths in India are due to anemia and one in every two Indian women 56% suffers from some form of anemia.

ICMR district nutrition survey (1999-2000)the prevalence of anemia in India is 84.2% with 13.1% with severe anemia in women.

National family health survey 2005 -2006,in India 1.62million people suffer from anemia that is 87% people affected with anemia33% were having mild anemia, 14% having moderate anemia and 2% were having severe anemia.

National family health survey 2000, in Tamilnadu 55% of peoples affected with anemia 43% were having mild anemia, 18% having moderate anemia and 1% were having severe anemia.

According to scholars research library (2014) more than half of women in India that is 55% were having anemia it includes 39%with mild anemia, 15% with moderate anemia and 2% with severe anemia

In Tamil Nadu nearly 39% of women are affected with anemia, among them 69% are iron deficit.

(Tafeja 2014)

According to Pope W.Tet. al, 2011, nutritional problems have serious public health significance impacting psychological, physical and developmental of the young women. Iron deficiency is by for the commonest nutritional cause of anemia. In this the prevalence of anemia were in the age group of 20-24 years is 3.61% and 35.90% in the age group of 25 to 29 years.

According to Vitull. Ket.al, 2010, anemia is one of the Indian's major public health problem. The prevalence of anemia was found to range from 30% to 98% in different regions. In this the prevalence of anemia in female 89.5% which include 49.8% mild, 38.2% moderate and 1.5% severe and for male 89.9% with 51.2% suffering from mild, 38% from moderate and 0.71% from severe anemia, in this high prevalence of anemia in both male and females in the rural population.

According to Debjit Chattopadhyay et.al,2005 the prevalence of anemia among OPD patient in East India, total number of cases of which 761 patient are male

1141 patient are female. In this 468 that is 17.50 young adult groups are affected with anemia.

The pan American health organization (2008) report shows about 5 to 17% of the young adult women are anemic.

Dr. Santha Nalini(2013) conducted a survey among 100 young adult population to find out the effectiveness of amla with honey. Among that 74 young adult with anemia were ruled out by using purposive sampling technique. 60 anemic young adults were randomly assigned 30 in experimental group and 30 in control group. The anemic status based on the hemoglobin score is high in experimental group ('t' value is 6.72*).

According to Ingels (2004) iron absorption may be increased by taking it with 100 mg or more of vitamin C. Iron supplements should not be taken at a same time as coffee, tea, soy, or calcium supplements, since these substances interfere with iron absorption.

Statement Of Problem

"A pre experimental study to assess the effectiveness of Amla juice on hemoglobin level among young adult female with anemia at Sree Mookambika College of nursing, Kulasekharam".

Objectives Of Study

1. To assess the level of hemoglobin among young adult female in Sree Mookambika College of nursing.
2. To determine the effectiveness of amla juice in improvement of hemoglobin level among young adult female.

3. To find out the association between the hemoglobin level of young adult with selected demographic variable such as age, education, religion, marital status, diet pattern, type of menstrual cycle, duration of menstrual cycle and consume green leafy vegetable.

Hypotheses

H1 – There will be significant improvement in hemoglobin level among young adult female consuming amla juice at 0.05 level of significant.

H2 – There will be a significant association between level of hemoglobin with their demographic variable such as age, education, religion, marital status, diet pattern, type of menstrual cycle, duration of menstrual cycle and consume green leafy vegetable.

Operations Definition

Effectiveness: In this study effectiveness refers to improving hemoglobin level among young adult female after giving amla juice as measured by hemoglobinometer.

Amla juice: In this study Amla juice refers to the preparation of 100gmfresh amla deseed and chop it roughly. Put the chopped amla in the mixer and blend it for 5 minutes and add 100ml of water then strain the liquid and add one teaspoon of honey and makes a juice and administer to the young adult girls of 100ml per day before breakfast for one month.

Anemia: Anemia refers to the range of serum hemoglobin level between 7 to 10.9gm/dl in healthy young adult female as measured by hemoglobinometer.

Young Adult: In this study young adult refers to women belonging to the age group of 20 to 25 years.

Variable

Independent variable

- Amla juice

Dependent variable

- Level of Hemoglobin.

Assumption

The proposed study assumed that

1. Most of young adult are anemic.
2. Young adult will be ready to consume the amla juice
3. Amla juice will improve the hemoglobin level.

Delimitation

Study is delimited to the young adult female between 20-25years in Sree Mookambika College of Nursing in Kulasekharam.

Ethical clearance

The proposed study was conducted after the approval of the college research and ethical committee. The permission to conduct the study was obtained from the director of Sree Mookambika Medical College and assurance and confidentiality was given to the subject and oral consent was taken.

Conceptual frame work

Conceptualization refers to the process of developing and refining abstract. The conceptual frame work is a global idea about concept in relation to specific discipline.

One of the important purpose of theoretical framework is to communicate clearly and the relationship of various concepts.

The conceptual framework for this study was derived from – modified J.W. Kenny's open system model (1990). Open system model serves as a model for reviewing people as interacting with the environment.

Open system model is a set of related definitions, assumption and preposition which deals with reality but pays particular attention to the interaction with one another in order to achieve a goal.

The following are the major concepts of the theory.

A. INPUT
B. THROUGHPUT
C. OUTPUT

Input

Input is the intervention done by the researcher. In this study input refers to administration of 100ml of amla juice for young adult females and also the demographic variable such as age, education, living locality, type of menstruation, duration of menstruation, marital status, consuming green leafy vegetable and food habits.

Through put

Through put is the activity phase. In this study through put is after administration of 100ml amla juice is the process of transformation occurs.

Output

It is the return of matter, energy and information to the environment in the form of both physical and physiological. In this study, the expected outcome is improvement in the level of hemoglobin after providing the amla juice. The hemoglobin level is measured by hemoglobinometer.

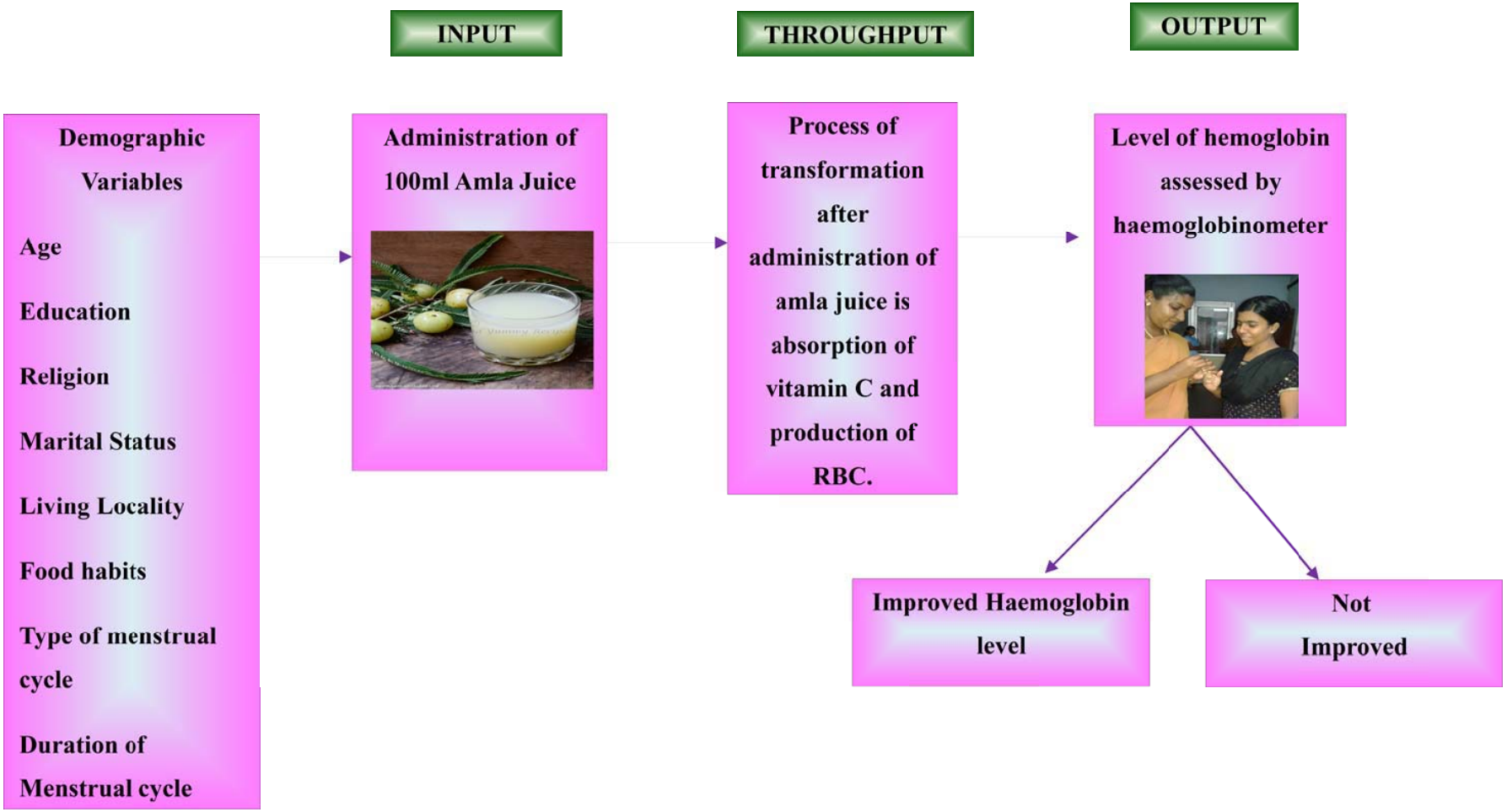


Figure 1. **J. W Kenny's Open System Model**

CHAPTER II

Review Of Literature

Review of literature is a key step in research process. It is an account of what is already known above a particular phenomenon. The main purpose of the literature review is to convey to the readers about the work already done and the knowledge and ideas that have been already established on a particular topic of research. It refers to an extensive, exhaustive and systematic examination of publication relevant to the research project.

A literature review is an evaluation report of information found in the literature related to selected area of study. The review describes summaries, evaluates and clarifies the literature. It gives a theoretical base for the research and helps to determine the nature of research (Queensland University 1998)

Research literature was reviewed and organized under the following headings:

i) Studies related to prevalence of anemia among young adult
ii) Studies related to effectiveness of amla to improve hemoglobin level.
iii) Studies related to effectiveness of natural therapy to improve hemoglobin level.

i) Studies related to prevalence of anemia among young adult

Malhotra.P et al, (2004) conducted an epidemiological survey on prevalence of anemia in adult rural population of north India. 215 individuals underwent the blood investigation between the age group of 16-70 years, the overall prevalence of

anemia is 50 %(136) were females, 44.3 %(78) were males. The finding of this study shows higher prevalence of anemia in adult females.

Sanjeev. M et al(2008)conducted a study on estimation of prevalence of anemia among adult female in urban area at Nagpur. Cross-sectional survey was done for 296 adult females between the age group of 20-29 years, for 6 months. From that total sample 104 (35.1%) were having anemia. In this 72(69.2%) were mildly anemic, 32(30.2%) were moderately anemic and no one is having severe anemia. Thus the study identified that the prevalence of anemia was high in adult females.

Ross.J, Horton Set al. (2001) conducted a study on the prevalence of anemic Subjects were selected between the age group of 20-25years. In this 35.7% young adult has moderate anemia 26.72% were mild anemia and 9.2% were severe anemia. So the investigator concluded that intensive dietary program has the potential to improve the iron status of women with iron deficiency.

Saratha. A (2010) conducted a cross – sectional study on prevalence of anemia among young adult female students in a medical teaching institution in Pondicherry Among300 medical and nursing students. 228 (76%) were anemic. In that 170 (56.67%) had mild and 58 (19.33%) had moderate anemia and students also gave history of passing worms in stool. Association between anemia and increase age, increase academic year, consumption of green leafy vegetable was significant. Thus they concluded that the prevalence of mild and moderate anemia among young adult female medical and nursing students were high, concerted effort is needed for dietary andiron supplementation for correction of anemia.

Verma Pratima et.al (2012) conducted a study on prevalence of anemia in adult with respect to socio-demographic status blood group and religion in north

Indian population. The young of population both male and females were in the age group of 20 to 50 years. The prevalence of anemia in female with the age group of 20-50years was 70.1% which includes 48.7% mild, 19.9% moderate and 1.5% severe anemia. Thus they concluded that high prevalence of anemia is found in adult females in Indian population.

Sanjay Kumar Gupta et al (2012) conducted a cross sectional study on prevalence of anemia among rural population living around the rural health center in Madhya Pradesh. In that 42% of anemic cases between the age group of 11-25 years. Among them, 82% of females and 18% of males have anemia. 32.54% were having mild anemia, 42% were having moderate anemia, and 3% were having severe anemia. The study identified that the prevalence of anemia was high in females compared to males.

Gerardo Alvarez-uria et.al(2014).Conducted a study on Prevalence and severity of anemia stratified by age and gender in rural India. The retrospective observational study was used for patients attending the out-patient clinics of rural hospital in India from June 2011 to August 2014. The study included 73, 795 determination of hemoglobin. Out of that 49.5% patient were female. They identified iron deficiency is the major cause of anemia in females. So the researcher concluded that the public programs can be implemented to reduce the burden of anemia.

Rakesh chip (2014) conducted a study on prevalence of anemia in adults with respects to age gender and religion in Jammu city between the age group of 20-50 years. In this study 49.23% were having mild anemia, 20% were having moderate anemia and 1.15% were having severe anemia. So the result shows that the prevalence of anemia was high in females.

Ramesh Verma et.al (2014) conducted a study on prevalence of anemia in college going youths in rural block of Haryana. Total 187 students between the age group of 17-24 years, in that 60.96% were anemic. In this 44.38% were mildly anemic 13.9% were severely anemic majority of girls (61.49%) were in the age group of 20-24years. (55.8%) were late adolescents (15-19yrs). Thus the study revealed that anemia is found to be a major health problem among the college going girls in rural area.

Babita(2014) conducted a study to estimate the prevalence of anemia among 320 unmarried female nursing college students at Sant Baba Bhag Singh institution of nursing. Among 320 female nursing students, 94% were having anemia. The result shows that 45.3% were having mild anemia, 51.3% were having moderate anemia, and 3.3% were having severe anemia. The prevalence anemia among B.Sc. Nursing students is 96.2% and GNM is 92.5%.

ii) Studies related to the effectiveness of amla juice

Torres MA.(1995)conducted a pre experimental study for seven men and three women between the age group of 20-45years . The participants received a regular diet with amla juice for 2 weeks. At the end of 2 weeks the blood sample were withdrawn to assess the blood for minerals, vitamin C, and hemoglobin. The blood results shows that amla juice increased vitamin C concentration (47%) serum iron (20%) and hemoglobin (11%).The study was concluded that amla juice helped to increase the serum iron and vitamin C level.

Gopaldas.T (2002) conducted a descriptive study to find out the association between dietary changes and iron-deficiency anemic status among young working women at the workplace. Total 302 young working women were from four small

factories at Bangalore in the age group of 18-23years. In unit 'I' 72 women received idli for four times a week plus information on education and communication related to iron deficiency anemia, then unit 'II' 80 women received 20ml of gooseberry juice(containing 40mg of vitamin C) three times a week plus information education and communication once in month, Unit III 70 women received 400mg albendazoleonce and ferrous sulfates tablet (60mg elemental iron) for two times a week and no information on education and communication and unit IV receives no intervention. The hemoglobin status of unit I, II, III was improved significantly from 11.10 to 12.30gm/dl, 11.20 to 12.70gm/dl and 11.50 to 13.00gm/dl respectively. Unit IV there was no changes the values were 10.90g/dl before and after intervention. So the result of the study showed that the type of work place lunch had greater significance than information on education and communication related to iron deficiency anemia.

Krishna Mohan et.al (2010) conducted a study to assess the effectiveness of natural Amla with ghee for patients with iron deficiency anemia (IDA). All patients admitted to hospital were provided medication and Amla with ghee for 4 weeks. A total of 19 anemia patients (7gms/dl) were evaluated at the end of the trial. Eleven anemic patients were receiving Amla with ghee and medication, while 8 were receiving only medication. Results showed that after 4 weeks the 11 patients received medication and Amla with ghee were increased hemoglobin levels (between the ranges of 12-13 g/dl) comparing to the 8 members received only medication (9-10g/dl). So they concluded that amla with ghee was very effective on improving hemoglobin level.

Dr.Santhanalini et.al (2013)conducted a study to assess the effectiveness of amla juice among anemic young adults.100 young adults were screened using survey method, 74 anemic young adults were identified out of which 60samples were selected by purposive sampling technique 30 were allotted to experimental group and 30 in control group. After providing the amla juice the experimental group value was higher than the control group value. So the researcher concluded that amla juice is very effective for anemia.t=6.72*

Souzaqueiroz et.al (2013) conducted a quasi-experimental study to find the effectiveness of amla juice in prevention of anemia among adolescent girls at selected hospitals in Kerala. 60 samples were selected by purposive sampling technique 30 in experimental group and 30 in control group. Pretest was done to both experimental and control group which revealed63% had moderate anemia, 37% had severe anemia. After one month of intervention the post test results showed that the level of anemia in experimental group (96.7 %) had mild anemia, one (3.3%) had moderate anemia and no women had severe anemia, and in control group 25 (83.3%) had mild anemia, five (16.7%) had moderate anemia and nobody had severe anemia. The study was concluded that amla juice was very effective to improve the hemoglobin level.

iii) Studies related to effectiveness of non-pharmacological therapy to improve hemoglobin level.

Dr. N. Gayathri Priyaletal (2013) conducted a study on effectiveness of beet root juice on hemoglobin among young adults. The study design adapted by them was true experimental design. The total number of sample is 60, 30 young adults were allotted in experimental group and 30 in control group. Fresh beet root juice was administered to the samples, and then posttest was done. The result shows that over

all pretest mean score is10.04 and posttest mean score is 12.67. And the‘t’ value is 17.787. The study concluded that beet root juice is effective method to improve hemoglobin level of anemic young adults.

Mrs. Ananthalakshmi et.al, (2013) conducted a study on effectiveness of beetroot juice on hemoglobin among adolescent girls. True experimental designs with 60 adolescent girls were selected and 30 in experimental group and 30 in control group. Fresh beet root juice was provided during mid-morning for 20 days. The result shows that highly significant improvement in level of hemoglobin. t=12.63∗ at p=0.001. And the study was concluded that fresh beet root juice is very effective in improvement of hemoglobin.

Sindhu S et.al,(2013) conducted a study on effectiveness of moringaoleifera in treating iron deficiency anemia in women of reproductive age group at Bangalore total 60 anemic women were selected between the age group of 15-45 years with the use of simple random sampling. 30 women were in experimental group and 30 women in control group. For experimental group they provided 100gm of moringaoleifera and jaggery for 30 days. The posttest value was higher than the pretest value t=4.109∗. So they concluded that moringaoleifera and jaggery has significantly improved the hemoglobin level.

CHAPTER III

Methodology

Introduction

The study was intended to assess the effectiveness of amla juice to improve hemoglobin level among early anemic young adult female between the age group of (20-25years).

The research methodology includes research approach, research design, setting, population, sampling, and selection criteria, development of tool and description of tool.

Research approach:

In this study the research approach is quantitative research approach.

Research design:

The research design used in this study is one group pretest and posttest design.

E O_1 x O_2

E Experimental

O_1 - Pretest to determine the level of hemoglobin among young adult

X - Amla juice

O_2-Posttestevaluates the effectiveness of amla juice for young adult with anaemia after one month of intervention.

Setting

The study was conducted in Sree Mookambika college of Nursing Kulasekharam at Kanyakumari District.

Variable

Independent variable

- Amla juice

Dependent variable

- Level of Hemoglobin.

Population

Target population

The target population for the study was young adult female with anemia.

Accessible population

Accessible population for the study was anemic young adult female (20-25years) at Sree Mookambika College of Nursing Kulasekharam. And who meet the inclusion criteria.

Sample size

The sample size consists of 60 between the age group of 20 to25 years.

Sampling technique

Purposive sampling technique was used in this study.

Criteria for Sample Selection

Inclusion criteria

- Young adult female between the age group of 20 to 25 years
- Subject who are interested to participate in this study
- Subjects hemoglobin level less than 7 to 10.9mg/dl

Exclusion criteria

- Young adult female who have history of bleeding disorder like hemophilia or other major illness like leukemia and renal failure.
- Young adult who is consuming iron supplements.
- Young adults who are allergic to amla juice.

Data collection tool

The data collection instrument used for this study was digital hemoglobin meter.

The tool used in this study was

1. Demographic variables
2. Hemoglobinometer.

Section – A

It deals with demographic variables such as Age, Education, Religion, and Marital status, living locality, Food habits, type of menstrual cycle and duration of menstrual cycle.

Section -B

Investigator checks the level of anemia by using the digital hemoglobinometer and categorizes the subjects as mild, moderate and severe.

This hemoglobinometer is used to estimate the hemoglobin level of young adult females (20-25 years)

The level of anemia is classified.

11 – 13 gm/dl	-	Healthy
10-10.9gm/dl	-	Mild anemia
8-10.8gm/dl	-	Moderate anemia
Less than 7gm/dl	-	Severe anemia.

Testing of tool

Validity

Content validity of the tool was established on the basis of the opinion of five experts. One expert is medical Doctor and four experts are medical surgical nursing personnel.

Reliability

The reliability of the tool was identified by test retest method using spearman rank correlation formula. The r – value is 0.07 hence the tool was reliable.

Pilot Study

The pilot study was conducted in Sree Mookambika College of Nursing student at III year B.Sc. (N) in order to find out the feasibility. The pilot study was conducted among 6 anemic young adult female. The period of conducting pilot study was one week, 6 students who fulfill the selection criteria was selected. The purpose of the study was explained to the anemic student; and ensures the confidentiality of their response.

Pretest was done by using digital hemoglobinometer. After that 100 gm. of amla juice added with 100ml of water and added one teaspoon of honey given at morning before breakfast for one week. After one week posttest was done by using the digital hemoglobinometer.

Date collection procedure

Formal permission for data collection was obtained from the director of Sree Mookambika College of nursing Kulasekharam. The samples were selected by purposive sampling technique. All thedewormed subjects were selected and made to drink the amla juice in an empty stomach every day morning for one month. After one monthposttest was estimated by using the same digital hemoglobinometer.

Plan for data Analysis

Data analysis was done by using inferential and descriptive statistical methods. Descriptive statistics such as frequency distribution, mean and standard deviation were used to assess the level of hemoglobin. Inferential statistical method such as paired‘t’ test was used to find out the effectiveness of amla juice. The association between variables was analyzed by using chi-square test.

Summary

This chapter described that scientific pathway through which investigator proceeded for conducting the study. The setting of the study, the population, sample, the tool and techniques used for the study were clearly described. It also gave account of the pilot study, data collection procedures of the actual study and plan for analysis.

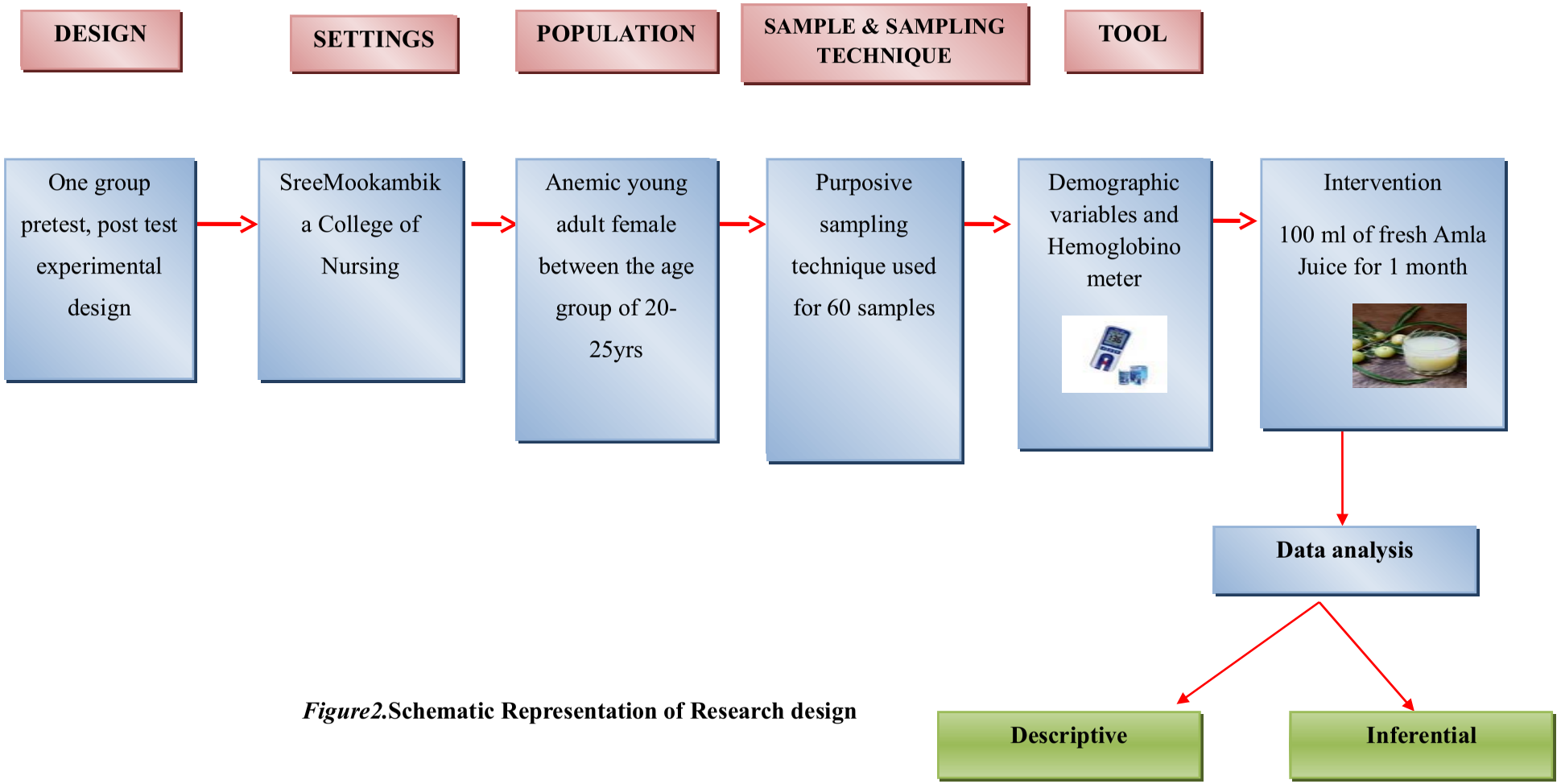


***Figure2.*Schematic Representation of Research design**

CHAPTER IV

Data Analysis and Interpretation

This chapter deals with the analysis and interpretation of data collected in accordance with the objectives stated for the study. The data collections were analyzed by using descriptive and inferential statistics. The test score was analyzed by statistical mean and standard deviation the significance difference of mean scores were interpreted by‘t’ test.

The effectiveness of the amla juice for anemia was assessed by‘t’ test. The association between demographic variable and level of anemia was studied by chi-square test.

Objective of the study

The objectives of the study were,

1. To assess the level of hemoglobin among young adult in Sree Mookambika College of Nursing.
2. To determine the effectiveness of amla juice in improvement of hemoglobin level among young adult.
3. To find out the association between the hemoglobin level of young adult and selected demographic variables like age, education, religion, marital status, diet pattern, type of menstruation, duration of menstruation and consume green leafy vegetable.

Section A

This section displays the demographic variable of the subjects selected by the investigator.

Section B

This section deals with the Frequency and percentage Distribution according to level of anemia.

Section C

This section deals with effectiveness of amla juice for anemic young early adult by comparing pretest and posttest score among young adult.

Section D

This section deals with association between the level of anemia and selected demographic variables such as age, education, religion, marital status, duration of menstruation, dietary pattern, consume green leafy vegetable and type of menstruation.

Section A- Demographic variables

Table 1

Frequency and Percentage distribution of sample according to their demographic variable of study subjects N=60

S.No.	Demographic Variable	Young adult		χ^2
		Frequency	Percentage%	
1.	Age			
	20-22 years	58	96.6%	1.108
	23-25 years	2	3.33%	
2.	Education			
	B.Sc (N)	44	73.3%	
	GNM	13	21.6%	1.15
	Post B.Sc	3	5.0%	
3.	Religion			
	Hindu	31	50%	
	Christian	28	46.6%	0.75
	Muslim	2	3.33%	

4.	Marital Status			
	Married	2	3.3%	0.18
	Unmarried	58	96.6%	
5.	Food habit			
	Non-vegetarian	57	95%	0.17
	Vegetarian	3	5.0%	
6.	Type of Menstruation			
	Regular	55	91.6%	1.7
	Irregular	5	8.3%	
7.	Duration of Menstruation			
	2-4 days	54	90.0%	
	5-7 days	6	10.0%	0.35
	More than 7 days	0	0%	
8.	Consume green / leafy vegetable			
	Yes	54	90.0%	0.029
	No	6	10.0%	

Note - The above table describes the distribution in number and percentage of study subjects according to their demographic variables, 96% participant, in the age group of 20-25 years.

73.3% were B.Sc. (N) students, 50% of the students were Hindu and 96.6% were un-married and all of them were living in hostel and 95% were non-vegetarian 91.6% were having regular menstruation and 90% were consuming leafy vegetables and no one having the history of past illness.

The above findings are presented as figure.

1. Distribution of Demographic variables according to age presented as a bar diagram in figure 3.

2. Distribution of demographic variables according to education presented as a bar diagram in figure 4.
3. Distribution of demographic variables according to religion presented as a bar diagram in figure 5.
4. Distribution of demographic variables according to marital status presented as a bar diagram in figure 6.
5. Distribution of demographic variables according to food habits presented as a bar diagram in figure 7.
6. Distribution of demographic variables according to type of menstruation presented as a bar diagram in figure 8.
7. Distribution of demographic variables according to duration of menstruation as presented as a bar diagram in figure 9.
8. Distribution of demographic variables according to consume green leafy vegetable presented as a bar diagram in figure 10.

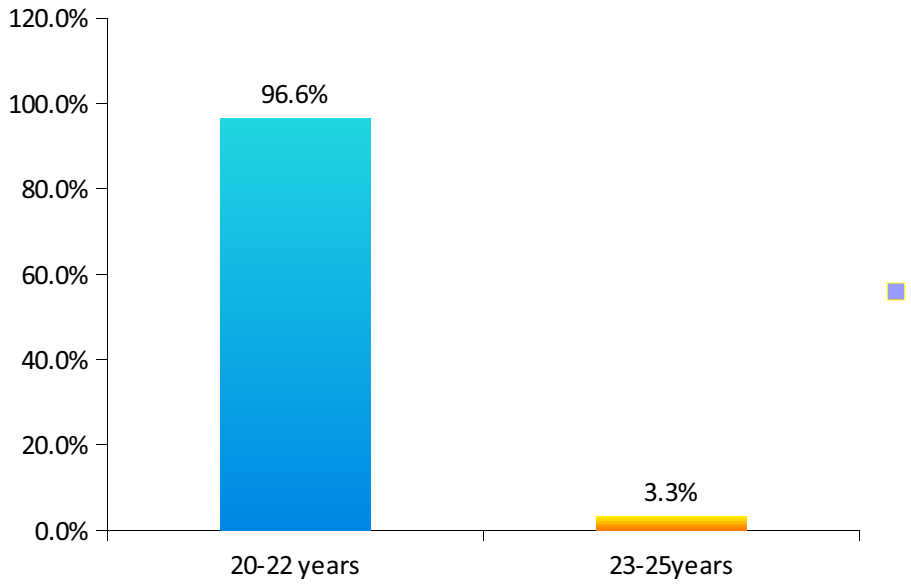


Figure3. **Distribution of demographic variable according to age**

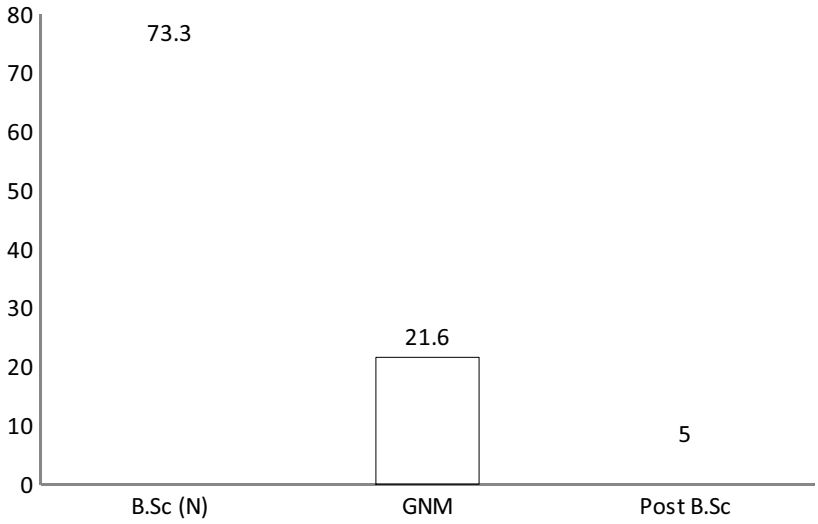


Figure 4. **Distribution of demographic variables according to education**

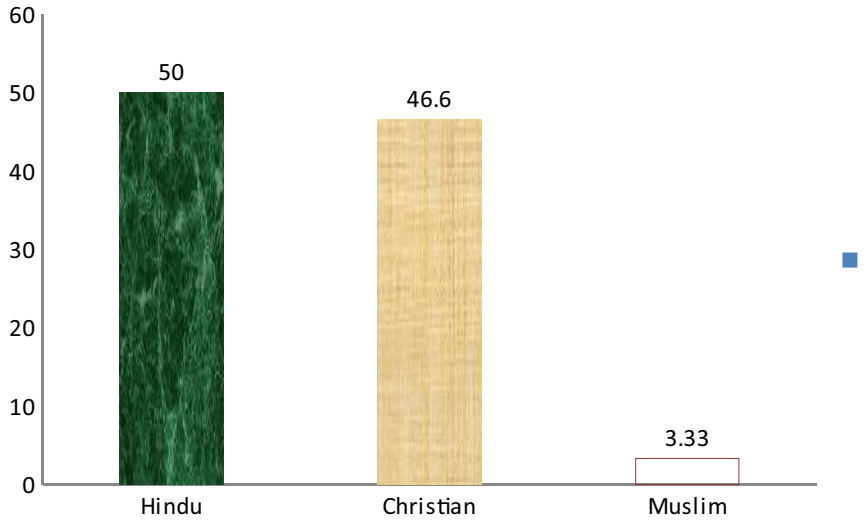


Figure 5. **Distribution of demographic variables according to religion**

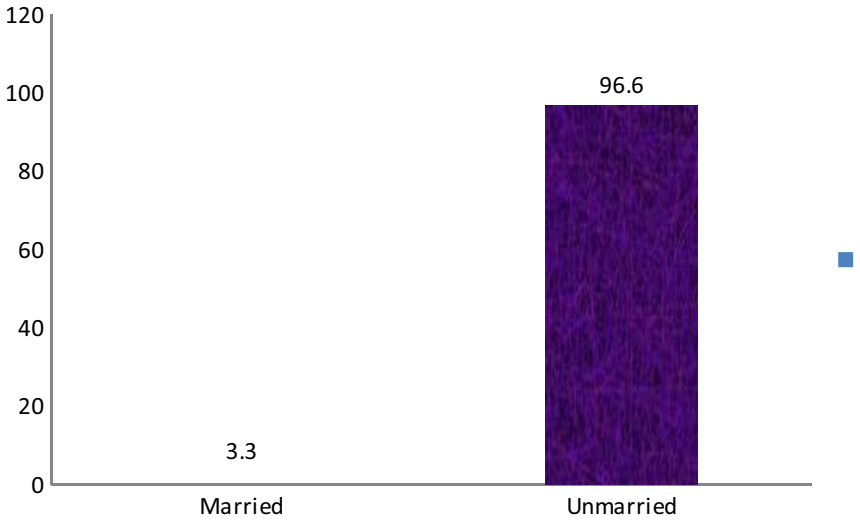

120
100
80
60
40
20
0
96.6
3.3
Married
Unmarried

Figure 6. **Distribution of demographic variables according to marital status**

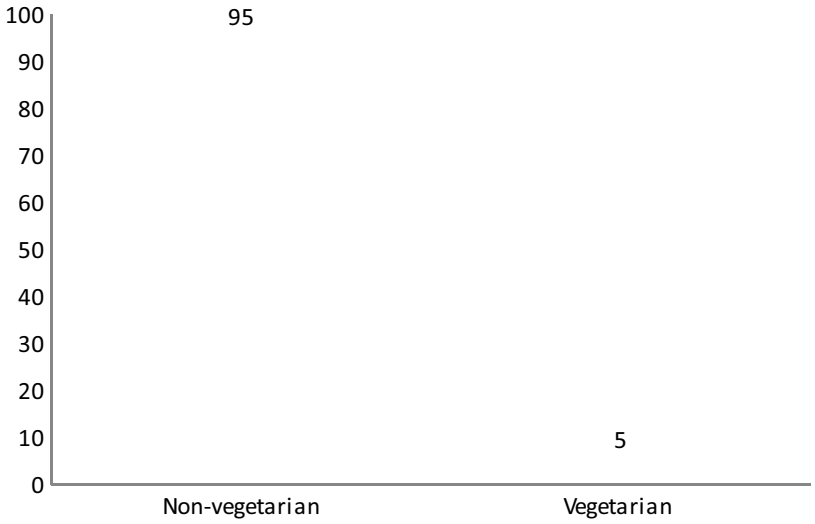


Figure 7. **Distribution of demographic variables according to food habit**

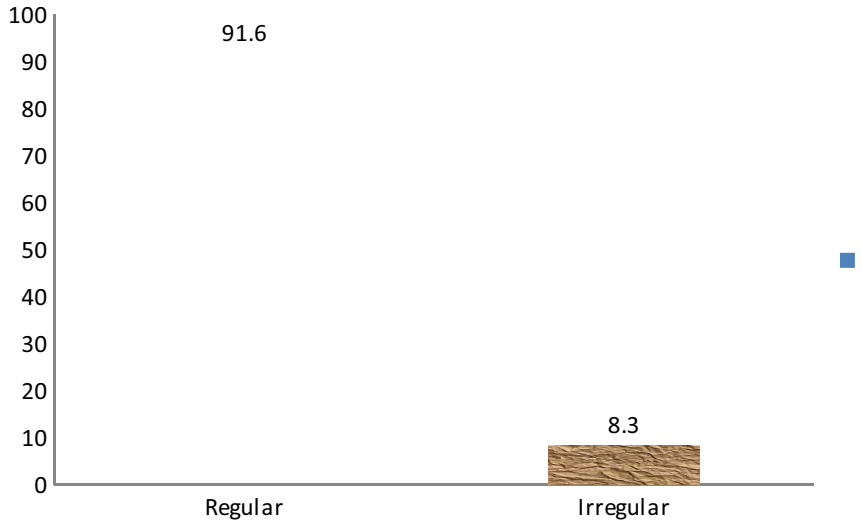
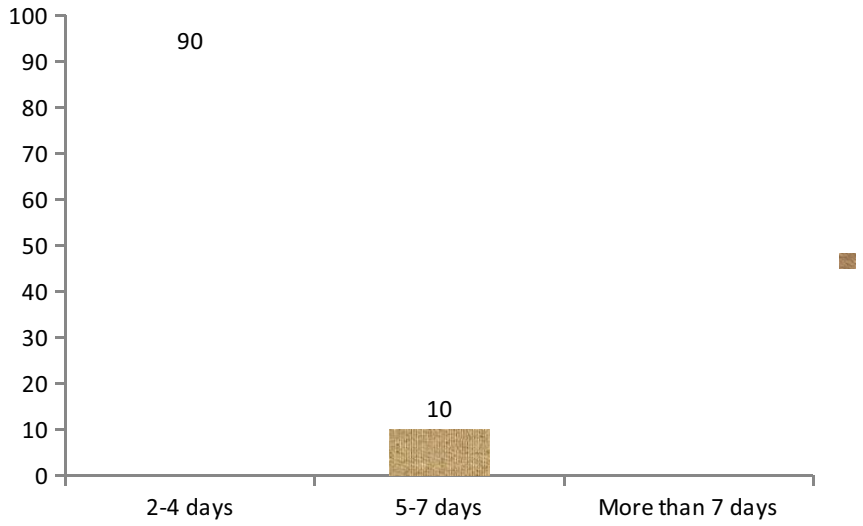

100
90
80
70
60
50
40
30
20
10
0
91.6
8.3
Regular
Irregular

Figure 8. **Distribution of demographic variables according to Type of Menstruation**



0%

Figure 9. **Distribution of demographic variables according to duration of menstruation**

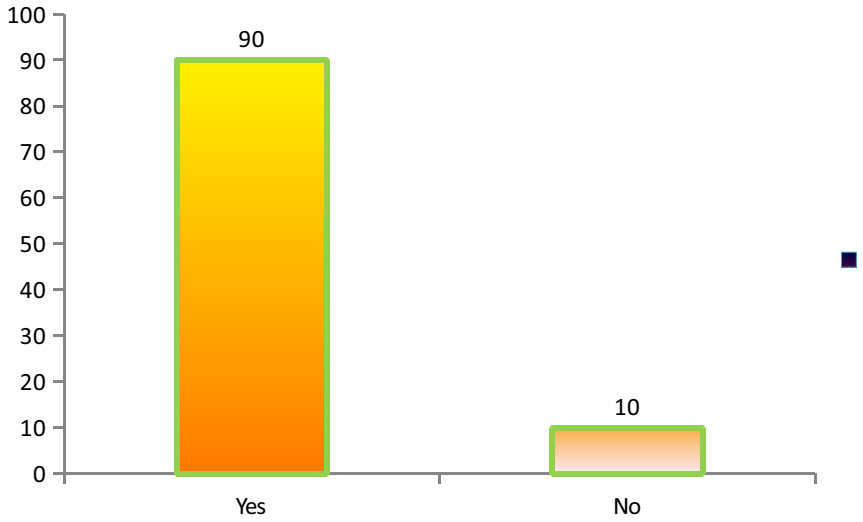


Figure 10. **Distribution of demographic variables according to consume green leafy vegetable**

SECTION – B

Distribution of anemia

This section deals with the distribution of anemia

Table : 2

Frequency and percentage Distribution according to level of anemia

N=60

Level of anemia	Before		After	
	f	%	f	%
11-13 Healthy	0	0%	29	48.3%
10-10.9 Mild	26	43.3%	15	25%
8-10.9 moderate	27	45%	16	26.6%
7 and less than 7 severe	7	11.66%	0	0%

Note - The above table shows the frequency and percentage distribution of sample according to the level of anemia. In the pretest 11.66% were having severe anemia. In the posttest 48.3% were healthy.

The above findings are presented in a bar diagram in figure 11

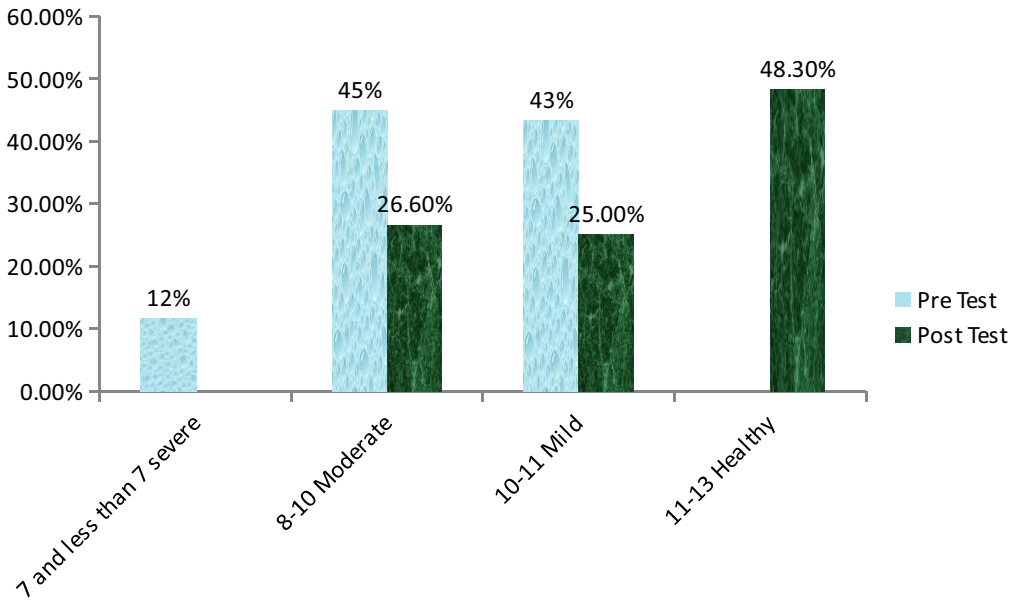


***Figure 11. Fr*equency and percentage distribution according to anemia**

Section: C-Effectiveness of amla juice for anemic young adult female.

This section deals with the effectiveness of amla juice for anemic young adult female.

Table: 3

Effectiveness of amla juice for anemic young adult female.

Category	Pretest		Posttest		df	t-value	Table value
	Mean	SD	Mean	SD			
Level of anemia	9.6	1.11	10.61	1.19	59	19.33*	2.0

*Significant at P<0.05

Note - The above depicts that the effectiveness of amla juice for anemia. The mean score was increased after giving amla juice is from 9.6 to 10.6 and the standard deviation was 1.11 to 1.19 respectively. The above table reveals that the calculated value 19.33 is higher than the table value (t value is 2.00) with df 59 and 0.05 level of significance ($p<0.05$).

There is significant improvement in the level of anemia after giving amla juice.

The above findings are presented as bar diagram in figure 12

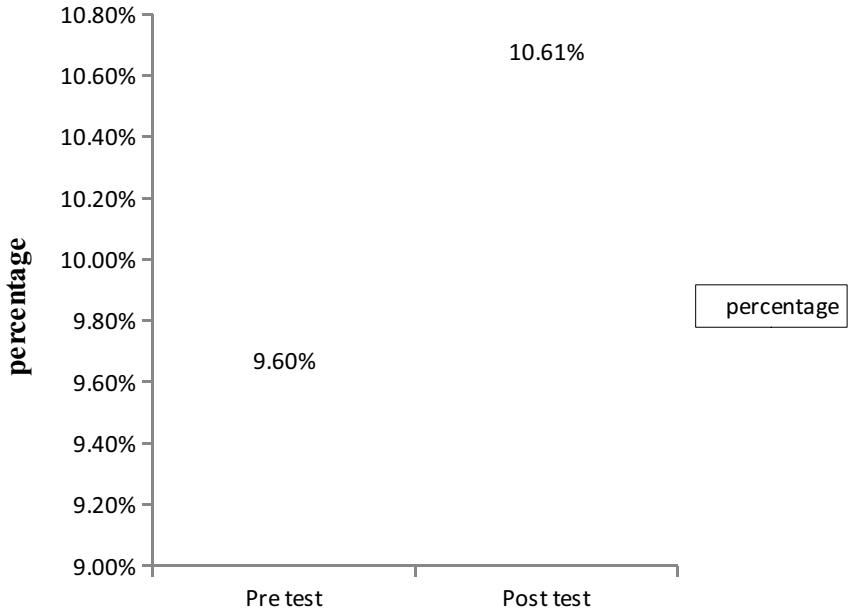


Figure 12. **Effectiveness of amla juice for young adult female**

Section: D -Association between anemia and the selected demographic variable

This section deals with association between the level of anemia and selected demographic variable such as age, education, religion, living locality, food habit, type of menstruation, duration of menstruation and consuming green leafy vegetable.

Table: 4

Association between anemia and the selected demographic variable

N = 60

S.No.	Demographic Variable	Frequency	χ^2	df	Table Value
1.	Age				
	a. 20-22 years	58	1.108	1	3.84
	b. 22-25 years	2			
2.	Education				
	a. B.Sc. (N)	44	1.15	2	5.99
	b. GNM	13			
	c. Post B.Sc.	3			
3.	Marital Status				
	a. Married	58	0.18	1	3.84
	b. Unmarried	2			

4.	Religion				
	a. Hindu	30	0.75	2	5.99
	b. Christian	28			
	c. Muslim	2			
5.	Food habit				
	a. Non-vegetarian	3	0.17	1	3.84
	b. Vegetarian	57			
6.	Type of Menstruation				
	a. Regular	55	1.7	1	3.84
	b. Irregular	5			
7.	Consuming green leafy vegetable		0.029	1	3.84
	a. Yes	54			
	b. No	6			
8.	Duration of menstruation				
	a. 2-3 days	54	0.35	2	5.99
	b. 5-7 days	6			
	c. more than 7 days	0			

Note – The about table shows that there is no significant association between level of anemia and demographic variable such as age, religion, education, marital status, living locality, type of menstruation, duration of menstruation, consuming green leafy vegetable and dietary habit was obtained at the 0.05 level of significance.

CHAPTER V

RESULTS AND DISCUSSION

The present study was undertaken to assess the effectiveness of amla juice for anemic young adult female at Sree Mookambika college of Nursing, Kulasekharam. The level of hemoglobin was assessed by digital hemoglbinometer. The results and

Discussion of the study are based on the findings obtained from the statistical analysis.

Objectives of study

- To assess the level of hemoglobin among young adult female in Sree Mookambika College of nursing.
- To determine the effectiveness of amla juice in improvement of hemoglobin level among young adult female.
- To find out the association between the hemoglobin level of young adult with selected demographic variable such as age, education, religion, marital status, food habit, type of menstrual cycle, duration of menstruation and consume green leafy vegetable etc.

The first objective of the study is to assess the level of hemoglobin among young adult female in Sree Mookambika College of nursing.

The hemoglobin level of anemic young adult female in Sree Mookambika College of nursing is presented in section-B. the hemoglobin status of young adults female before providing the amla juice is 7(11.66%) were having severe anemia, 27 (45%) were having moderate anemia and 26(43.3%) were having mild anemia. And after providing the amla juice 29(48.3%) were healthy that is above 11gm/dl, and no one is having severe anemia.16 (26.6%) were having moderate anemia. So the prevalence rate is reducing after providing the amla juice.

The second objective of the study is to determine the effectiveness of amla juice in improvement of hemoglobin level among young adult female.

The effectiveness of amla juice in pretest mean and standard deviation is $\pm$9.6 and 1.19 and posttest mean and standard deviation is $\pm$10.61 and 1.19. In this study effectiveness of amla juice is 19.33$*$ and the table value is 2.0. So the amla juice is very effective to improve the hemoglobin level. Hence the research hypothesis H1 was accepted.

The study finding is congruent with study conducted by **Dr. Santhanalini. et,al. 2013.**Conducted a survey on 100 young adult to rule out anemia,74 anemic young adults were randomly selected 30 samples for experimental and 30 samples for control group after providing the amla juice to experimental group value is higher than the control group value. So the researcher conclude that amla juice is very effective for anemia. t=6.72*

The third objective is to find out the association between the hemoglobin level of young adult with selected demographic variable such as age, education, diet pattern, menstrual cycle etc.

There is no significant association between the level of hemoglobin and selected demographic variables. Thus the research hypothesis H2 rejected.

CHAPTER VI

Summary, Conclusion, Nursing Implication, Limitation and Recommendations

This chapter is having summary, conclusion, nursing implication, limitation and recommendation.

Summary of the study

The study was undertaken to assess the effectiveness of amla juice for anemic young adult female in Sree Mookambika College Nursing students at Kulasekaram.

Objective of the study

To assess the level of hemoglobin among female young adult in Sree Mookambika College Nursing.

To determine the effectiveness of amla juice in improvement of hemoglobin level among female young adult.

To find out the association between the hemoglobin level of female young adult and selected demographic variable like age, education, marital status, food habit, green leafy vegetable.

Hypotheses

There is a significant improvement in the hemoglobin level among young adult consuming amla juice at 0.05 level of significant.

There is no significant association between level of hemoglobin among young adult with their demographic variables such as age, education, religion, marital status, food habit, type menstrual cycle, duration of menstrual cycle and consume green leafy vegetables.

The researcher adopted a quantitative research approach with one group pretest posttest design. The study was done on sixty anemic young adult female students in Sree Mookambika Nursing. In this study, the independent variable is amla juice and dependent variable is anemia. The subjects were selected by purposive sampling techniques and data were collected from the sixty samples. Formal permission for data collection was obtained from the director of Sree Mookambika College of nursing Kulasekharam. There are 285 young adult females in the college. According to inclusion and exclusion criteria screening was done and the dewormed young adult female was selected by purposive sampling technique. All the subjects

were made to drink 100ml of amla juice in an empty stomach every day for one month. After one month posttest was estimated by using the same digital hemoglobinometer. The collected data were analyzed based on descriptive and inferential statistics according to the above mentioned objectives. J. W. Kenny's open system model was adopted to evaluate the effectiveness of amla juice among anemic young adults; data collection tool is demographic data and digital hemoglobinometer.

Study finding

The study identified that the level of hemoglobin was increased after giving the amla juice. It was found that there was a significant improvement in the level of hemoglobin after giving the amla juice. The effectiveness of amla juice was found to be $t=19.33*$, $df=59$, $P<0.05$.

In this study there was association found between the demographic variables.

Nursing Implication

Therefore the finding of the study has considerable implication on nursing administration, nursing education nursing practice, nursing research.

Implications to nursing administration

1. Nurse administer can take steps to conduct training classes regarding importance of amla juice for anemia.
2. The nurse administrator can act as a change agent in utilizing the research finding.
3. The study helps the nurse administrator to assess the knowledge of nurse regarding non pharmacological measures to improve hemoglobin.
4. Nurse administer can educate the community for deworming before taking iron supplements.

Implications to nursing education

1. Nurse educator can train and encourage the student nurse to implement the amla juice for anemia.

2. This study can motivate student nurse to explore new strategies for improvement of hemoglobin
3. This research report can kept in library for reference of nursing personnel and other health care professionals
4. The nurse educator can present the details of effectiveness of amla juice in curriculum meeting and include the maneuver in the curriculum as a non-pharmacological measure to improve the hemoglobin level.

Implication to nursing practice

1. Amla juice is a safe and better non pharmacological modality which brings a higher level of satisfaction for patients.

2. The nurse can take amla juice as a research evidence and should practice in their daily nursing care
3. The nurse practitioners can take independent decisions based on principles of health care.

Implication to nursing research

1. The nurse research implications of the study lie in the scope for expending the quality of nursing service. In this era of evidence based practice, publication of this study will take nursing to a new horizon.

2. Nurse researcher can do various studies related to find out effectiveness of amla juice for anemia
3. The nurse researcher can conduct other research studies based on the research evidence from this study
4. The nurse researcher can conduct studies to find out the knowledge and practice of amla juice among staff nurses.
5. A comparative study can be done to determine the effectiveness of amla juice with other non-pharmacological measures
6. Similar study can be conducted on large sample do it could be generalized.

Limitation

1. The sample size of the client was only 60. Hence generalizations is not possible

2. The data collection period was only one month
3. The study was limited only to the female anemic young adult at Sree Mookambika College of Nursing
4. Extraneous variables are controlled to some extent only.

Recommendation

1. The study may be replicated with randomization in selection of a large sample.

2. Nurse researcher can do studies related to amla juice to improving hemoglobin level.
3. Studies can be done to determine the other therapeutic benefits of amla juice
4. Studies can be conducted by including more number of variables.
5. Nurse researcher can do studies related to the effect of amla juice to improve the hemoglobin and to improve the quality of care.

Conclusion

1. The conclusion drawn from the findings of the study are as follows.
2. Amla juice is effective for improving hemoglobin level for anemic young adult females.
3. Amla juice found has no side effects when comparing with other treatment.

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APPENDIX A

Ethical Clearance certificate

SREE MOOKAMBIKA COLLEGE OF NURSING

(Approved by the Government of Tamil Nadu & Recognised by Indian Nursing Council, New Delhi, Tamil Nadu state Nurses & Midwives Council, Chennai.)
Affiliated to The Tamil Nadu Dr. M.G.R. Medical University, Chennai.

PADANILAM WELFARE TRUST, V.P.M.HOSPITAL COMPLEX, PADANILAM, KULASEKHARAM, K.K.DIST., TAMIL NADU, PIN : 629 161.
Phone : 04651 - 280743, 280866, 280742, 280745

ETHICAL COMMITTEE CLEARANCE

Date : .....

To

Lr. No. 11.01.2014

Mrs. Aslin Johnsi .L

I Yr. M.Sc (N),

Sree Mookambika College of Nursing,

Kulasekharam.

Ref : Research Topic: An experimental Study to assess the effectiveness of amla juice on Hemoglobin level among young adult females with anemia at Sree Mookambika College of Nursing, Kulasekharam, Kanyakumari District.

Sub : Approval of the above reference study and its related documents

Dear Aslin Johnsi . L

Ethics committee of Sree Mookambika College of Nursing , Kulasekharam reviewed and discussed the study proposal documents submitted by you related to the conduct of the above referenced study and its meeting held on 11.01.2014

The Following ethical committee Members were present at the meeting held on 11.01.2014

NAME	PROFESSION	POSITION IN THE COMMITTEE
Prof. Mrs. Shanthi Letha	Nursing	Chair Person
Dr. Kani Raj Peter	Medical	Basic Medical Scientist
Dr. T.C. Suguna	Nursing	Clinicians
Adv. Mohanan	Legal	Legal Expert
Prof. Mrs. Ajitha Rethnam	Nursing	Member Secretary
Dr. Preetha P.Nair	Management	Philosopher
Mr. Natarajan	Social	Medical Social Worker
Mrs. Latha	Lay Person	Community Person

After due ethical and scientific consideration, the Ethics committee has approved the above presentation submitted by you.

Regards,

Mrs. SANTHI LETHA PhD (N)

Ethics Committee – Chairperson,

Sree Mookambika College of Nursing,

V.P.M. Complex, Padanilam,Kulasekharam.

Date : 11.01.2014

Place : Kulasekharam.

APPENDIX B

Letter seeking permission for tool and content validity

SREE MOOKAMBIKA COLLEGE OF NURSING

PADANILAM WELFARE TRUST, V.P.M.HOSPITAL COMPLEX, PADANILAM,
KULASEKHARAM, K.K.DIST., TAMILNADU, PIN : 629 161.
Phone : 04651 - 280745, 280742, 278250
(Approved by Govt. of The Tamil Nadu & Recognised by Indian Nursing Council, New Delhi)

Date :

Lr. No :

LETTER SEEKING EXPERT OPINION FOR TOOL VALIDITY

Date :

To

Madam / Sir

Sub : M.Sc Nursing Programme – dissertation – Validation of study tool request –reg:

Ms/Mrs. **Aslin Jhonsy. L** a bonafide if II Year M.Sc Nursing student of Sree Mookambika College of Nursing is approaching you to obtain validation of study tool pertaining to her dissertation in practical fulfillment of the requirement for the degree of Master of Science in Nursing. The selected topics is A study to assess the effectiveness of amla juice for anaemic young adult in Sree Mookambika College of Nursing, Kulasekharam. In this regard I request you to kindly extent possible technical guidance and support for successful completion of dissertation.

I enclosed here with a check list for your evaluation.

Thanking You

Yours Sincerely

PRINCIPAL

PRINCIPAL
Sree Mookambika College of N...
Kulasekharam ...

APPENDIX C

PERMISSION LETTER FOR DATA COLLECTION

From

Aslin Johnsi. L.

Sree Mookambika college of nursing

Kulasekaram

To

The Director

(Through principal)

Sree Mookambika College of Nursing

Kulasekaram

Respected Madam,

I Mrs. Aslin Johnsi. L. wants to conduct a project as a part of our M.Sc Nursing programme. My project topic is **"A study to assess effectiveness of amla juice on hemoglobin level among young adult female with anemia at Sree Mookambika College of Nursing, Kulasekharam in Kanyakumari District"** My data collection period is from (06-04-2015 to 06-05-2015). So I humbly request you to grant me permission to do my project in our hospital.

Thanking You

Yours faithfully

Aslin Johnsi. L.

APPENDIX D

Certificate for Tool Reliability

From

L. ASLIN JOHNSI
IInd Year M.Sc., Nursing,
Sree Mookambika College of Nursing,
Kulasekharam.

To

THE BIO - MEDICAL ENGINEER
Sree Mookambika Medical Institute,
Kulasekharam.

Respected Sir,

As a part of my research study I'am in a need of doing reliability for my Hemoglobinometer. I kindly request you to accept it and do the needful.

Thanking you

Kulasekharam
13.08.2014

Your's Faithfully,
L. Aslin Johnsi

Hemoglobinometer is tested and reliable

BME
13/8/14

SREE MOOKAMBIKA INSTITUTE OF MEDICAL SCIENCES
KULASEKHARAM-629 161

APPENDIX E

List of experts for tool and content validation

1. **Dr. Mrs. Sharmila M. Sc(N), Ph.D (N)**

   Professor,

   CSI College of Nursing,
   Neyyoor.

2. **Mrs. SheebaM.Sc (N) Ph.D (N)**
   Professor,
   CSI College of Nursing,
   Neyyoor.

3. **Mrs. Amuthu M.Sc(N)**
   Vice principal,
   P.S College of Nursing,
   Thalakulam.

4. **Mrs. Joseph Merlin M.Sc(N).,**
   Professor,
   Saraswathycollege of nursing,
   Parassalai.

5. **Dr. Thilakar, MD**
   Asst. Professor, Department of Medicine
   Sree Mookambika medical college hospital,
   Kulasekharam.

APPENDIX F

EVALUATION TOOL CHECK LIST

Name of the expert :

Designation :

College :

Respected Madam / Sir,

Kindly go through the content and place the right (√) marks against the check list in the following columns ranking from relevant to non-relevant. Where ever there is a need for modification, kindly give your opinion in the remarks column.

SECTION A

DEMOGRAPHIC VARIABLES

Item no.	Relevant	Needs modification	Not Relevant	Remarks

SECTION B

CHECK LIST

Item no.	Relevant	Needs modification	Not Relevant	Remarks

APPENDIX G

Data collection tool

SECTION A

Demographic variables

1. AGE

A. 20-22 years
B. 22-25 years

2. EDUCATION

A. MSc (N)

B. BSc (N)

C. GNM

3. RELIGION

A. Hindu

B. Christian

C. Muslim

4. MARITAL STATUS

A. Married

B. Unmarried

5. FOOD HABITS

A. Vegetarian

B. Non-vegetarian

6. TYPE OF MENSTURAL CYCLE:

A. Regular

B. Irregular

7. DURATION OF MENSTURAL CYCLE**:**

A.2-4 days

B.4-7 days

C. more than 7 days

8. CONSUME GREEN LEAFY VEGETIBLE:

A.Yes

B. No

SECTION B

Hemoglobinometer Monitoring

Hemoglobin classification

11-13 gm/dl	-	Healthy
10-10.9 gm/dl	-	Mild
8-10.9 gm/dl	-	Moderate
7 and Less than 7 gm/dl	-	Severe

APPENDIX H

Data Collection procedure

Formal permission for data collection was obtained from the director of Sree Mookambika College of nursing Kulasekharam. There are 285 young adult females in the college. According to inclusion and exclusion criteria screening was done and the dewormed young adult female was selected by purposive sampling technique. All the subjects were made to drink 100ml of amla juice in an empty stomach every day for one month. After one month posttest was estimated by using the same digital hemoglobinometer.

Step 1

Pretest for hemoglobin estimation

Step 2

Administration of amla juice

Step 3

Posttest of hemoglobin estimation